

## CLAIMS

I claim:

1. A modular/configurable rotary die for a rotary die cutter for making a corrugated carton blank, comprising:

a plurality of die components each having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet to cooperatively form a corrugated carton blank in a rotary die cutter.

2. The rotary die according to claim 1, wherein said plurality of die components include, with reference to the three dimensions of a carton to be erected from a corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least one width die component which determines the width of the carton.

3. The rotary die according to claim 2, wherein said at least one length die component determines both height and length of the carton.

4. The rotary die according to claim 1, further comprising a plurality of die mounting clamps for mounting the die elements on a roller of a rotary die cutter.

5. The rotary die according to claim 4, wherein said die mounting clamps include means for adjustably positioning the clamps relative to threaded attachment holes in a roller of a rotary die cutter on which the die elements are mounted.

6. The rotary die according to claim 4, wherein said plurality of die components include components having slots on their outer surfaces for receiving said die

mounting clamps therein when the die components are mounted on a roller of a rotary die cutter.

7. The rotary die according to claim 1, wherein said plurality of die components are interlocked with one another to assure accurate positioning and alignment with each other.

8. The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having two quick closing continuous closure panels that run parallel to each other end-to-end along the length of the carton blank on respective sides of the carton blank.

9. The rotary die according to claim 8, wherein said plurality of die components include:

- (a) four score die components that determine the length of a carton to be erected from the corrugated carton blank;
- (b) four crease die components that determine the height of the carton; and
- (c) four quick closing closure panel die components that determine the width of the carton and create the quick closing closure panels.

10. The rotary die according to claim 8, wherein said plurality of die components include:

- (a) two score/crease panel die components that determine the height and the length of a carton to be erected from the corrugated carton blank;
- (b) one crease die component that determines the height of the carton; and
- (c) four quick closing closure panel die components that determine the width of the carton and create the quick closing closure panels.

11. The rotary die according to claim 8, wherein said plurality of die components include die components having curved cut blades that cut the outline of hide away handles on a quick closing closure panel formed on the corrugated carton blank.

12. The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having a quick closing continuous closure panel that runs along the length of the carton blank on one side thereof and on an opposite side has a plurality of flaps with cut slots separating the flaps.

13. The rotary die according to claim 12, wherein said plurality of die components include:

- (a) four score die components that determine the length of a carton to be erected from the corrugated carton blank;
- (b) four crease die components that determine the height of the carton;
- (c) two flap die components that determine the width of the carton and cut the slots for the flaps; and
- (d) two quick closing closure panel die components that determine the width of the carton and create the quick closing closure panel.

14. The rotary die according to claim 12, wherein said plurality of die components include:

- (a) two score/crease panel die components which determine the height and the length of a carton to be erected from the corrugated carton blank;
- (b) one crease die component that determines the height of the carton;
- (c) two flap die components that determine the width of the carton and cut the slots for the flaps; and

(d) two quick closing closure panel die components that determine the width of the carton and create the quick closing closure panel.

15. The rotary die according to claim 12, wherein said plurality of die components include die components having curved cut blades that cut the outline of hide away handles on the quick closing closure panel formed on the corrugated carton blank.

16. The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having two rows of flaps, separated by cut slots, which rows run parallel to each other end-to-end along the length of the carton blank on opposite sides of the carton blank.

17. The rotary die according to claim 16, wherein said plurality of die components include:

- (a) four score die components that determine the length of a carton to be erected from the corrugated carton blank,
- (b) four crease die components that determine the height of the carton; and
- (c) four flap die components that determine the width of the carton and cut the slots for the flaps.

18. The rotary die according to claim 16, wherein said plurality of die components include:

- (a) two score/crease panel die components that determine the height and the length of a carton to be erected from the corrugated carton blank;
- (b) one crease die component that determines the height of the carton; and
- (c) four flap die components that determine the width of the carton and cut the slots for the flaps.

19. The rotary die according to claim 16, wherein said plurality of die components include die components having curved cut blades that cut the outline of hide away handles on the quick closing closure panel formed on the corrugated carton blank.

20. The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having one quick closing continuous closure panel that runs along the length of the carton blank on one side thereof, which carton blank can be erected to form a telescope half carton.

21. The rotary die according to claim 20, wherein said plurality of die components include:

- (a) two score/crease die components that determine the height and the length of the carton to be erected from the corrugated carton blank;
- (b) one crease die component that determines the height of the carton; and
- (c) two quick closing closure panel die components that determine the width of the carton.

22. The rotary die according to claim 1, wherein said plurality of die components cooperate to form a corrugated carton blank having a row of flaps separated by cut slots that runs along the length of the carton blank on one side thereof, which carton blank can be erected to form a telescope half carton.

23. The rotary die according to claim 22, wherein said plurality of die components include:

- (a) two score/crease die components that determine the height and the length of a carton to be erected from the corrugated carton blank;

- (b) one crease die component that determines the height of the carton; and
- (c) two flap die components that determines the width of the carton and cut the slots for the flaps.

24. The rotary die according to claim 1, wherein said plurality of die components are pre-assembled in interlocking relation with one another on a brace for positioning the pre-assembled die components on a roller of a rotary die cutter.

25. The rotary die according to claim 1, wherein said plurality of die components are secured in position on a roller of a rotary die cutter.

26. A rotary die cutter for making a corrugated carton blank, comprising:

- a rotary die anvil roller;

- a rotary die roller;

- a rotary die mounted on the outer circumferential surface of the rotary die roller to form a rotary press with said rotary die anvil roller for producing a corrugated carton blank from a corrugated sheet fed between the rotary die and the anvil roller;

- wherein the rotary die is formed with a plurality of die components each having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet fed between the rotary die and the anvil roller to cooperatively form a corrugated carton blank.

27. The rotary die cutter according to claim 26, wherein said plurality of die components cooperate to form a corrugated carton blank having at least one quick closing continuous closure panel that runs end-to-end along the length of the carton blank.

28. The rotary die cutter according to claim 27, wherein at least two of said die components are quick closing closure panel die components that determine the width of the carton to be erected from the carton blank and create the at least one quick closing closure panel.

29. The rotary die cutter according to claim 28, wherein the at least two quick closing closure panel die components each have a curved cut blade that cuts the outline of a hide away handle on fold-in panels formed on the carton blank.

30. A method of producing corrugated carton blanks comprising feeding corrugated sheets between a rotary die roller having a rotary die mounted thereon and an anvil roller of a rotary press, including providing said rotary die in the form of a plurality of die components each having at least one blade thereon for at least one of scoring, creasing and cutting a corrugated sheet to cooperatively form a corrugated carton blank.

31. The method according to claim 30, wherein said plurality of die components include, with reference to the three dimensions of a carton to be erected from a corrugated carton blank, at least one length die component which determines the length of the carton, at least one height die component which determines the height of the carton, and at least one width die component which determines the width of the carton.

32. The method according to claim 31, wherein said at least one length die component determines both the height and the length of the carton.

33. The method according to claim 31, including interlocking said plurality of die components to one another.
34. The method according to claim 31, including charging the size/type of at least some of said plurality of die components to produce a different size/ type carton blank.
35. The method according to claim 34, wherein the at least one die component which determines the width of the carton is changed to a different type of width die component to vary the type of carton blank.
36. The method according to claim 34, wherein the size of at least some of the die components is charged to produce a different size of carton blank.
37. The method according to claim 30, wherein the corrugated carton blank produced includes at least one quick closing continuous closure panel that runs end-to-end along the length of the carton blank.
38. The method according to claim 37, including forming hide away handles in the at least one quick closing continuous closure panel in the carton blank.
39. The method according to claim 30, including mounting the plurality of die components on the rotary die roller using a plurality of die mounting clamps whose position relative to threaded attachment holes in the roller and fasteners therein is adjustable.